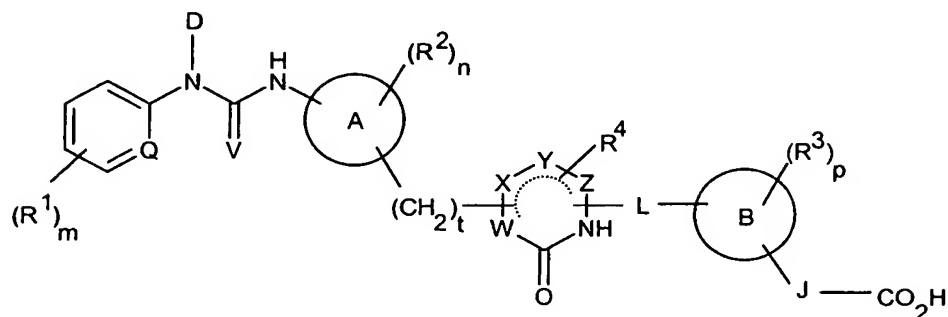


## CLAIMS

1. A compound of formula (I) or a pharmaceutically acceptable derivative thereof:



(I)

wherein

A and B are independently aryl or heteroaryl;

Q is C, CH or together with the group V or group D forms a 5 - 7 membered heterocyclic ring;

- 10 D is hydrogen,  $C_{1-6}$ alkyl or together with the group Q forms a 5 - 7 membered heterocyclic ring;

- $R^1$ ,  $R^2$  and  $R^3$  are independently  $C_{1-6}$ alkyl, halogen,  $C_{1-6}$ alkoxy, hydroxy, cyano,  $CF_3$ , nitro,  $C_{1-6}$ alkylthio, amino, mono- or di- $C_{1-6}$ alkylamino, carboxy,  $C_{1-6}$ alkanoyl, amido, mono- or di- $C_{1-6}$ alkylamido,  $NHCOR^9$  or  $NHSO_2R^9$  in which  $R^9$  is  $C_{1-6}$ alkyl,  $C_{3-7}$ cycloalkyl or phenyl (optionally substituted by up to three groups selected from  $C_{1-6}$ alkyl, halogen,  $C_{1-6}$ alkoxy, cyano, phenyl or  $CF_3$ ) or is a group  $-E-(CH_2)_{1-6}NR^XRY$  in which E is a single bond or  $-OCH_2-$  and  $R^X$  and  $R^Y$  are independently hydrogen,  $C_{1-6}$ alkyl or combine together to form a 5 - 7 membered heterocyclic ring;

$R^4$  is hydrogen,  $C_{1-6}$ alkyl, halogen or  $C_{1-6}$ alkoxy;

- 20 V is O, S, NH,  $N-C_{1-6}$ alkyl,  $NNO_2$ ,  $NCN$  or together with the group Q forms a 5 - 7 membered heterocyclic ring;

W, X, Y and Z are independently C, CH or  $CH_2$ ;

----- represents a single or double bond;

L is  $-(CH_2)_q-$  or  $-(CH_2)_qO-$  where q is 0, 1, 2 or 3 and q' is 2 or 3;

- 25 J is (i) a group  $-CR^5=CR^6-$  where  $R^5$  and  $R^6$  are independently hydrogen or  $C_{1-6}$ alkyl; or  
(ii) a group  $-CHR^7-CHR^8-$  where  $R^7$  and  $R^8$  are independently hydrogen,

C<sub>1-6</sub>alkyl, C<sub>3-7</sub>cycloalkyl, aryl, heteroaryl, a group -NHCOR<sup>9</sup>- or -NHSO<sub>2</sub>R<sup>9</sup>- in which R<sup>9</sup> is as defined above or a group -(CH<sub>2</sub>)<sub>1-6</sub>NR<sup>X</sup>R<sup>Y</sup>- in which R<sup>X</sup> and R<sup>Y</sup> are as defined above; or

- (iii) a single bond; or
- 5 (iv) -CHR<sup>6</sup>- where R<sup>6</sup> is as defined above; or
- (v) a group -O-CHR<sup>10</sup>-, -NR<sup>11</sup>-CHR<sup>10</sup>- or -CR<sup>12</sup>R<sup>13</sup>-CHR<sup>10</sup>- where R<sup>10</sup> and R<sup>11</sup> are independently hydrogen or C<sub>1-6</sub>alkyl and R<sup>12</sup> and R<sup>13</sup> are independently C<sub>1-6</sub>alkyl or R<sup>12</sup> and R<sup>13</sup> combine together to form a C<sub>3-7</sub>cycloalkyl or a 5 - 7 membered heterocyclic ring;
- 10 m, n and p are independently 0, 1, 2 or 3; and
- t is 0, 1 or 2.

2. A compound according to claim 1, wherein A is phenyl or pyridyl.

15 3. A compound according to claim 1 or 2, wherein B is phenyl.

4. A compound according to any of the preceding claims, wherein

20 R<sup>1</sup>, R<sup>2</sup> and R<sup>3</sup> are independently C<sub>1-6</sub>alkyl, halogen, C<sub>1-6</sub>alkoxy, hydroxy, cyano, CF<sub>3</sub>, nitro, C<sub>1-6</sub>alkylthio, amino, mono- or di-C<sub>1-6</sub>alkylamino, carboxy, C<sub>1-6</sub>alkanoyl, amido, mono- or di-C<sub>1-6</sub>alkylamido, NHCOR<sup>9</sup> or NHSO<sub>2</sub>R<sup>9</sup> in which R<sup>9</sup> is C<sub>1-6</sub>alkyl, C<sub>3-7</sub>cycloalkyl or phenyl (optionally substituted by up to three groups selected from C<sub>1-6</sub>alkyl, halogen, C<sub>1-6</sub>alkoxy, cyano, phenyl or CF<sub>3</sub>) or is a group -E-(CH<sub>2</sub>)<sub>1-6</sub>NR<sup>X</sup>R<sup>Y</sup> in which E is a single bond or -OCH<sub>2</sub>- and R<sup>X</sup> and R<sup>Y</sup> are independently hydrogen, C<sub>1-6</sub>alkyl or

25 combine together to form a ring including piperidinyl, piperazinyl, pyrrolidinyl or morpholinyl group in which ring is optionally substituted by C<sub>1-6</sub>alkyl;

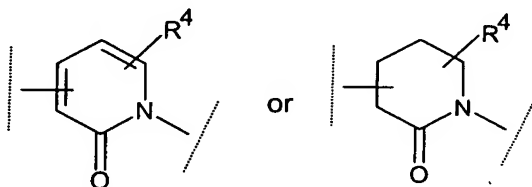
When Q and V combine together to form a ring including piperidinyl, piperazinyl, pyrrolidinyl or morpholinyl group, which is optionally substituted by C<sub>1-6</sub>alkyl;

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When Q and D combine together to form a ring including piperidinyl, piperazinyl, pyrrolidinyl or morpholinyl group, which is optionally substituted by C<sub>1-6</sub>alkyl;

- J is
- (i) a group  $-CR^5 = CR^6-$  where  $R^5$  and  $R^6$  are independently hydrogen or  $C_{1-6}$ alkyl; or
  - (ii) a group  $-CHR^7-CHR^8-$  where  $R^7$  and  $R^8$  are independently hydrogen,  $C_{1-6}$ alkyl,  $C_{3-7}$ cycloalkyl, phenyl, naphthyl, thienyl, furyl, pyrrolyl, triazolyl, imidazolyl, oxazolyl, thiazolyl, oxadiazolyl, isothiazolyl, isoxazolyl, thiadiazolyl, pyrazolyl, pyrimidyl, pyridazinyl, pyrazinyl, pyridyl quinoliny, isoquinoliny, indolyl, benzofuryl, benzothienyl, benzimidazolyl, benzoxazolyl, a group  $-NHCOR^9-$  or  $-NHSO_2R^9-$  in which  $R^9$  is as defined above or a group  $-(CH_2)_{1-6}NR^X R^Y-$  in which  $NR^X$  and  $R^Y$  are as defined above; or
  - (iii) a single bond; or
  - (iv)  $-CHR^6-$  where  $R^6$  is as defined above; or
  - (v) a group  $-O-CHR^{10}-$ ,  $-NR^{11}-CHR^{10}-$  or  $-CR^{12}R^{13}CHR^{10}-$  where  $R^{10}$  and  $R^{11}$  are independently hydrogen or  $C_{1-6}$ alkyl and  $R^{12}$  and  $R^{13}$  are independently  $C_{1-6}$ alkyl or  $R^{12}$  and  $R^{13}$  combine together to form  $C_{3-7}$  cycloalkyl, tetrahydropyranyl, piperidinyl, piperazinyl, pyrrolidinyl or morpholinyl;

the ring containing W, X, Y and Z is



5. A compound according to any of the preceding claims, wherein
- 20  $R^1$ ,  $R^2$  and  $R^3$  are independently  $C_{1-6}$ alkyl, halogen or  $C_{1-6}$ alkoxy;

Q is C, CH or together with the group V or group D form part of a benzimidazole, benzoxazole or indoline ring;

D is hydrogen,  $C_{1-6}$ alkyl or together with the group Q form part of a benzimidazole or benzoxazole ring;

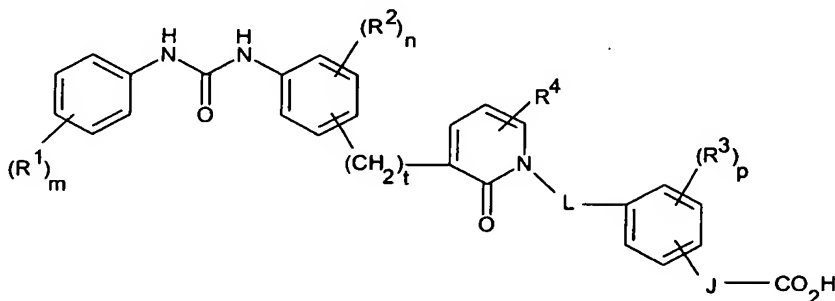
V is O or together with the group Q form part of an indoline ring;

$R^4$  is hydrogen or halogen;

J is (i) a group  $-CR^5 = CR^6-$  where  $R^5$  and  $R^6$  are independently hydrogen or  $C_{1-6}$ alkyl; or

- (ii) a group  $-\text{CHR}^7-\text{CHR}^8-$  where  $\text{R}^7$  and  $\text{R}^8$  are independently hydrogen,  $\text{C}_{1-6}$ alkyl,  $\text{C}_{3-7}$ cycloalkyl, phenyl, a group  $-\text{NHCOR}^9-$  in which  $\text{R}^9$  is  $\text{C}_{1-6}$ alkyl; or
- (iii) a single bond;
- (iv)  $-\text{CHR}^6-$  where  $\text{R}^6$  is as defined above; or
- 5 (v) a group  $-\text{O}-\text{CHR}^{10}-$ ,  $-\text{NR}^{11}-\text{CHR}^{10}-$  or  $-\text{CR}^{12}\text{R}^{13}\text{CHR}^{10}-$  where  $\text{R}^{10}$  and  $\text{R}^{11}$  are independently hydrogen or  $\text{C}_{1-6}$ alkyl and  $\text{R}^{12}$  and  $\text{R}^{13}$  are independently  $\text{C}_{1-6}$ alkyl or  $\text{R}^{12}$  and  $\text{R}^{13}$  combine together to form  $\text{C}_{3-7}$  cycloalkyl group.

6. A compound according to claim 1, wherein the compound is of formula (Ia) or a  
10 pharmaceutically acceptable derivative thereof:



(Ia)

wherein:

$\text{R}^1$ ,  $\text{R}^2$ ,  $\text{R}^3$ ,  $\text{R}^4$ ,  $\text{L}$ ,  $\text{J}$ ,  $m$ ,  $n$ ,  $p$  and  $t$  are as defined in formula (I).

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7. A compound according to any one of the preceding claims wherein:

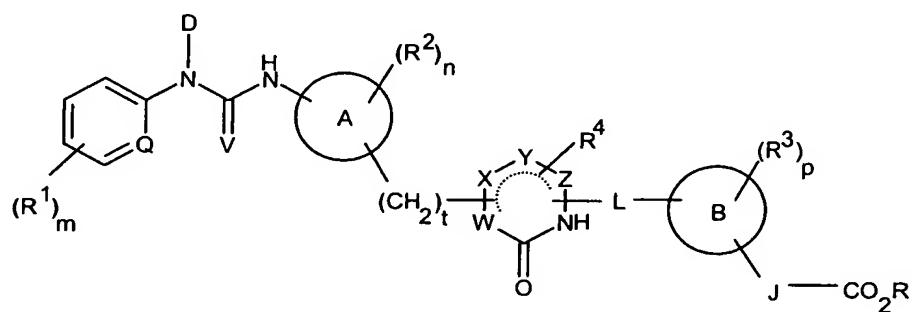
$\text{R}^1$ ,  $\text{R}^2$  and  $\text{R}^3$  are independently  $\text{C}_{1-6}$ alkyl, halogen,  $\text{C}_{1-6}$ alkoxy, hydroxy, cyano,  $\text{CF}_3$ , nitro,  $\text{C}_{1-6}$ alkylthio, amino, mono- or di- $\text{C}_{1-6}$ alkylamino, carboxy,  $\text{C}_{1-6}$ alkanoyl, amido, mono- or di- $\text{C}_{1-6}$ alkylamido,  $\text{NHCOR}^9$  or  $\text{NHSO}_2\text{R}^9$  in which  $\text{R}^9$  is  $\text{C}_{1-6}$ alkyl,  $\text{C}_{3-7}$ cycloalkyl or phenyl optionally substituted by up to three groups selected from  $\text{C}_{1-6}$ alkyl, halogen,  $\text{C}_{1-6}$ alkoxy, cyano, phenyl or  $\text{CF}_3$ ;

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$\text{L}$  is  $-(\text{CH}_2)_q-$  where  $q$  is 0, 1, 2 or 3; and

- $\text{J}$  is (i) a group  $-\text{CR}^5=\text{CR}^6-$  where  $\text{R}^5$  and  $\text{R}^6$  are independently hydrogen or  $\text{C}_{1-6}$ alkyl; or
- 25 (ii) a group  $-\text{CHR}^7-\text{CHR}^8-$  where  $\text{R}^7$  and  $\text{R}^8$  are independently hydrogen,  $\text{C}_{1-6}$ alkyl or a group  $-\text{NHCOR}^9-$  or  $-\text{NHSO}_2\text{R}^9-$  in which  $\text{R}^9$  is as defined in claim 1.

8. A compound according to any of the preceding claims wherein J is a group -CH = CH-,  $-(CH_2)_2-$ ,  $-CHR^7-CH_2-$  in which  $R^7$  is  $C_{1-6}$ alkyl.
9. A compound according to claim 1 which is selected from the group consisting of E1 - E 51 or a pharmaceutically acceptable derivative thereof.
10. A compound according to claim 1 which is selected from the group consisting of E5, E9, E32, E41, E42 and E51 or a pharmaceutically acceptable derivative thereof.
11. A process for the preparation of a compound of formula (I) which comprises hydrolysis of a carboxylic acid ester derivative of formula (II):



(II)

- in which  $R^1 - R^4$ , m, n, p, t, A, B, D, L, J, Q, V, W, X, Y and Z are as defined in formula (I) and R is a group capable of forming a carboxylic acid ester and optionally thereafter forming a pharmaceutically acceptable derivative thereof.
12. A compound according to any one of claims 1 to 10 for use in therapy.
13. A pharmaceutical composition which comprises a therapeutically effective amount of a compound according to any one of claims 1 to 10 or a pharmaceutically acceptable salt thereof in admixture with a pharmaceutically acceptable carrier or diluent.
14. A pharmaceutical composition comprising a compound according to any one of claims 1 - 10 or a pharmaceutically acceptable derivative thereof together with another therapeutically active agent.

15. The use of a compound according to any one of claims 1 to 10 in the manufacture of a medicament for use in the treatment or prophylaxis of conditions in which an inhibitor of  $\alpha_4$  mediated cell adhesion is beneficial.
- 5 16. A method for the treatment or prophylaxis of conditions in which an inhibitor of  $\alpha_4$  mediated cell adhesion is beneficial which comprises administering to a patient in need thereof a safe and effective amount of a compound according to any one of claims 1 to 10.
- 10 17. The method according to claim 16, wherein said condition is selected from the group consisting of rheumatoid arthritis; asthma; allergic conditions; adult respiratory distress syndrome; AIDS-dementia; Alzheimer's disease; cardiovascular diseases; thrombosis or harmful platelet aggregation; reocclusion following thrombolysis; reperfusion injury; skin inflammatory diseases; diabetes; multiple sclerosis; systemic lupus erythematosus; inflammatory bowel disease; diseases associated with leukocyte infiltration to the gastrointestinal tract; diseases associated with leukocyte infiltration to epithelial lined tissues; pancreatitis; mastitis; hepatitis; cholecystitis; cholangitis or pericholangitis; bronchitis; sinusitis; inflammatory diseases of the lung; collagen disease; sarcoidosis; osteoporosis; osteoarthritis; atherosclerosis; neoplastic diseases; wound; eye diseases; Sjogren's syndrome; rejection after organ transplantation; host vs. graft or graft vs. host diseases; intimal hyperplasia; arteriosclerosis; reinfarction or restenosis after surgery; nephritis; tumor angiogenesis; malignant tumor; multiple myeloma and myeloma-induced bone resorption; sepsis, central nervous system injury and Meniere's disease.
- 15 18. The method according to claim 16, wherein said condition is asthma, allergic conditions, inflammatory bowel disease, rheumatoid arthritis, atopic dermatitis, multiple sclerosis or rejection after organ transplantation.
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